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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/294,659 | 04/19/1999 | CHANG-SOO PARK | 678-259(P873 | 6375 |

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EXAMINER

LIU, SHUWANG

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2634

DATE MAILED: 06/13/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/294,659

Applicant(s)

PARK ET AL.

Examiner

Shuwang Liu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-11, 17, 18, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 5-8, 19 and 22-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The rejection regarding the reference Hagenauer et al. (item 5 of the last office action) is withdrawn.

2. The item 8 of the last office action should be corrected as following:

Claims 6, 8, 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. Applicant's arguments filed on 04/04/03 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicant's arguments regarding the reference of Chennakeshu (item 4 of the last office action) but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

Applicant's argument – Chennakeshu does not teach a message information received and a controller for determining an iterative decoding number according to received message information.

Examiner's response – As disclosed in lines 37-55 of column 9, Chennakeshu teach means for determining a respective signal characteristic, for example, signal strength. Therefore, the signal strength is the message information received. Furthermore, Chennakeshu discloses when the signal has greater signal strength, the

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decoding means is selected to allow a reduction in the number of decoding iterations.

The reduction in the number of decoding iterations implies for determining an iterative decoding number according to received signal strength.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 2, 9-11, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Chennakeshu et al. (US 6,192,503).

As shown in figure 6, Chennakeshu et al. discloses a receiver for communication system, comprising:

(1) regarding claims 1 and 17:

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a message information receiver (140) for receiving information about a message to be received;

a controller (160) for determining an iterative decoding number according to the received message information (165) (column 9, lines 37-55); and

a decoder (152) for iteratively decoding the received message according to the determined iterative decoding number.

(2) regarding claims 2 and 18:

wherein the message information includes a class of received data (signal characteristic, for example, signal strength).

(3) regarding claims 9-11:

wherein the decoder is a soft-decision decoder (150) which is a MAP or SOVA (column 4, lines 12-30 and column 8, lines 12-49).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 4, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu et al. in view of Hagenauer et al. (US 6,377,610).

(1) regarding claims 3, 4, 20 and 21:

Chennakeshu et al. discloses all of the subject matter except for specifically teaching of the class including a bit error rate (BER) as recited in claims.

Hagenauer et al., in the same field of endeavor, teaches the relation between BER and iterative decoding number as shown in figure 11. The iterative decoding number increases (from 1 to 5) if the BER is less than a predetermined number.

It would be desirable to enable an existing signal format to be decoded more efficiently and with likelihood of bit errors than is possible with known methods so that by using the controller to determine the relation between BER and iterative decoding number. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to using the BER as the class of the receiving data as taught by Hagenauer et al. in the decoder process in order to allow the receiver having more efficiently decoding.

Allowable Subject Matter

8. Claims 5-8, 19 and 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

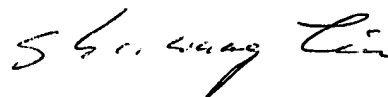
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

A handwritten signature in black ink, appearing to read "Shuwang Liu". The signature is fluid and cursive, with the first name "Shuwang" and the last name "Liu" clearly distinguishable.

Shuwang Liu
Primary Examiner
Art Unit 2634

June 9, 2003